Name ___________________________________

Counting to 1000

Essential Question How can you count forward and backward using place value?

A.4.3.1 Count forward and backward when given a number less than or equal to 1000

A.4.3.3 Identify a number that is more or less than any *whole number* up to 1000 using *multiples* of ten and/or 100

We use numbers to count items and to find numbers that are greater or less than any starting number. We can add any number to count forward and subtract any number to count backward.

UNLOCK the Problem REAL WORLD

Example 1 Count by 1s.

Any number can be a starting point to count up or count down.

Math Talk The first counting number is 1. Counting numbers are also called natural numbers.

Blaire owns a herd of 128 cattle. How large will his herd be if he adds 4 head of cattle?

To count up or count forward, _____ the same number every time.

128, 129, _____, _____, _____

+1 +1 +1 +1

So, Blaire would have _____ head of cattle after adding 4.

What if he sells 5 head of cattle?

To count down or count backward, ___________ the same number every time.

128, 127, _____, _____, _____, _____

−1 −1 −1 −1 −1

So, Blaire would have _____ head of cattle after selling 5.

Counting forward or backward can be done using any number or any place value. Make sure the same number is added every time to count forward or subtracted every time to count backward.

Example 2 Count by 10s.

Count forward and backward by 10s.

Count Forward: Add _____ each time.

384, 394, _____, _____, _____, _____

+10 +10 +10 +10 +10

Count Backward: Subtract _____ each time.

384, 374, _____, _____, _____, _____

−10 −10 −10 −10 −10

Notice that the digit in the ones place does not change. Only the tens place and hundreds place digits change.

Example 3 Count by 100s.

Math Talk If you are adding or subtracting 100, why do the digits in the tens and ones places stay the same?

What number is 100 greater than 629?
What number is 100 less than 629?

To find a number that is greater than a given number, _____.

629 _____ 100 = _____

To find a number that is less than a given number, __________.

629 _____ 100 = _____

Share and Show

For each of the numbers, count forward 5 ones.

1. 179, _____, _____, _____, _____, _____
2. 843, _____, _____, _____, _____, _____

For each of the numbers, count forward 5 tens.

3. 657, _____, _____, _____, _____, _____
4. 415, _____, _____, _____, _____, _____

Write the number that is 100 greater than the given number.

5. 294 _____
6. 726 _____
7. 343 _____

Name ______________________________

On Your Own

For each of the numbers, count forward 5 ones.

8. 127 ______________
9. 428 ______________
10. 913 ______________
11. 73 ______________
12. 82 ______________
13. 842 ______________

For each of the numbers, count backward 5 ones.

14. 929 ______________
15. 588 ______________
16. 81 ______________
17. 413 ______________
18. 164 ______________
19. 876 ______________

For each of the numbers, count forward 5 tens.

20. 45 ______________
21. 128 ______________
22. 81 ______________
23. 562 ______________
24. 374 ______________
25. 736 ______________

For each of the numbers, count backward 5 tens.

26. 815 ______________
27. 97 ______________
28. 519 ______________
29. 126 ______________
30. 234 ______________
31. 720 ______________

Write the number that is 100 greater than each of the following.

32. 662 ______
33. 397 ______
34. 347 ______
35. 504 ______
36. 296 ______
37. 612 ______

Write the number that is 100 less than each of the following.

38. 701 ______
39. 388 ______
40. 325 ______
41. 804 ______
42. 124 ______
43. 540 ______

Problem Solving REAL WORLD

Use the information for 44–46.

Donna is playing a game on her computer. At each level, she is shown 2 pictures that look the same but have 10 differences. She scores points based on the following rules:

At each new level, her starting score is the total points she earned on the previous levels.

She earns 1 point for each difference she finds.

One of the 10 differences is a bonus that is worth 10 points instead of 1.

SHOW YOUR WORK

44. At level 40, Donna has 318 points. If she finds only the bonus difference on each level, what will her score be at the beginning of level 44? **Explain** your answer.

____

45. Donna starts level 75 with 627 points. If she found only the bonus difference for the previous 3 levels, what was her score at the beginning of level 72? **Explain** your answer.

____

46. H.O.T. Donna has a score of 813 points at the beginning of level 90. Between level 83 and level 90 she found 5 regular differences and 7 bonus differences. What was her score at the beginning of level 83? **Explain** your answer.

____

____

47. ★**Test Prep** Which of the following numbers is 100 greater than 428?

Ⓐ 539 Ⓒ 429

Ⓑ 528 Ⓓ 328

48. ★**Test Prep** What number is 100 greater than 745?

Ⓐ 635 Ⓒ 845

Ⓑ 655 Ⓓ 855

Name ______________________________________

Compare and Order Whole Numbers

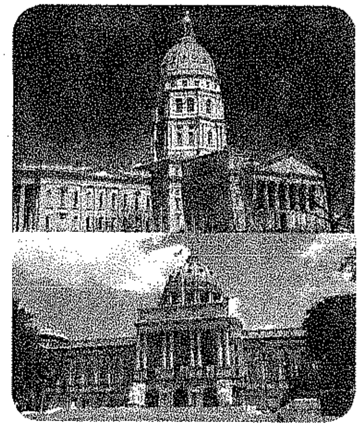
Essential Question What are some ways you can compare and order numbers?

NO.1.3.2 Use the *place value* structure of the base ten number system and be able to represent and compare *whole numbers* including thousands (using models, illustrations, symbols, *expanded notation* and problem solving)

NO.1.3.3 Use mathematical language and symbols to compare and order four-*digit* numbers with and without appropriate *technology* (<, >, =)

UNLOCK the Problem REAL WORLD

The Kansas State Capitol is 304 feet tall. The Pennsylvania State Capitol is 272 feet tall. Which building is taller?

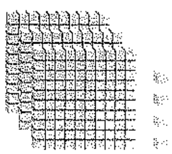


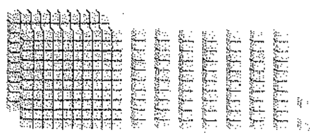
▲ Top: The Kansas State Capitol Bottom: The Pennsylvania State Capitol

You can use symbols to compare numbers.

>	<	=	≠
greater than	less than	equal to	not equal to

One Way Use base-ten blocks.

 304

 272

3 hundreds is __________ than 2 hundreds.

304 ◯ 272 Read: three hundred four is greater than two hundred seventy-two.

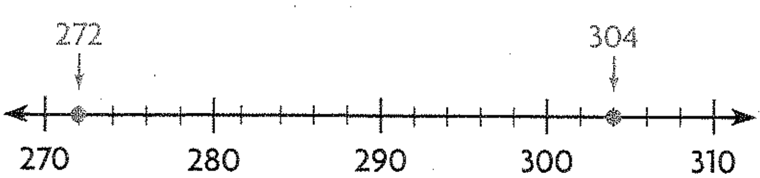
So, the Kansas State Capitol is taller.

Remember
When the number of digits is the same, compare the digits with the greatest place value first.

Other Ways

A Use a number line.

The numbers on the number line are in order from least to greatest.



304 is to the right of 272.

So, 304 ◯ 272.

B Use place value.

Compare digits in the same place-value position from left to right.

Hundreds	Tens	Ones
3	0	4
2	7	2

3 is __________ than 2.

So, 304 ◯ 272.

Math Talk Explain how you know that 78 is less than 312.

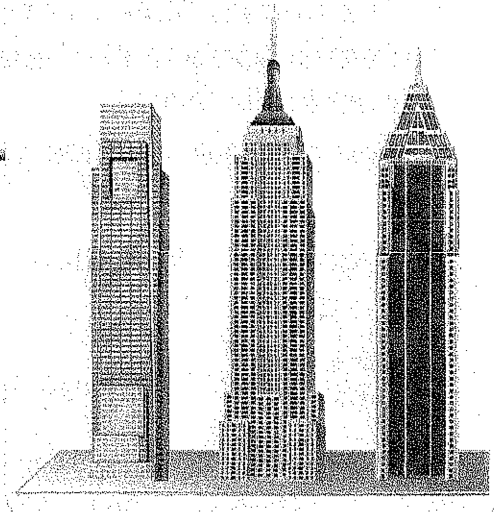
Ordering Numbers When you write numbers in order, you write them from greatest to least or least to greatest.

The table shows the names of the tallest buildings in three states. Which building is the tallest?

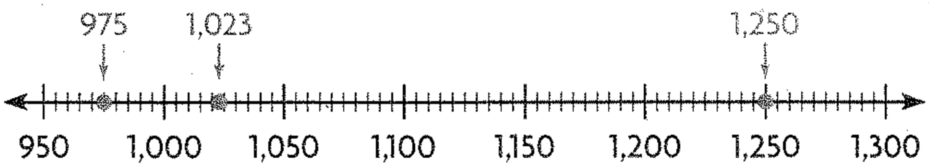
To find the tallest building, look for the building with the greatest height.

Tallest Buildings in Three States

State	Building	Height (in feet)
Pennsylvania	Comcast Center	975
New York	Empire State Building	1,250
Georgia	Bank of America Plaza	1,023



One Way Use a number line.



Which number is greatest? **Explain** how you know.

____

Which building is the tallest?

____

Another Way Use place value.

Order 975; 1,250; and 1,023 from greatest to least.

STEP 1

975
1,250
1,023

Compare the number of digits. 975 is the only 3-digit number.

So, ________ is the least number.

STEP 2

975
1,250
1,023

Compare the thousands. They are the same.

So, look at the hundreds.

STEP 3

975
1,250
1,023

Compare the hundreds. 2 is greater than 0.

So, ________ is greater than ________.

So, the order from greatest to least is ________; ________; ________.

Name ______________________________

Share and Show MATH BOARD

Compare the numbers. Write <, >, or = in the ◯.

1. 321 ◯ 420
2. 1,604 ◯ 864
3. 3,751 ◯ 3,766
4. 9,007 ◯ 7,009

Math Talk When you compare numbers with the same number of digits, why do you compare the digits with greatest value first? Explain.

Write the numbers in order from greatest to least.

5. 685, 402, 500

_____, _____, _____

6. 2,597; 4,698; 4,689; 3,851

_____; _____; _____; _____

Compare the numbers. Write = or ≠ in the ◯.

7. 6,247 ◯ 9,247
8. 2,331 ◯ 2,331

Remember
The = symbol means the 2 numbers have the same value. The ≠ symbol means the numbers do not have the same value.

On Your Own

Compare the numbers. Write <, >, or = in the ◯.

9. 850 ◯ 731
10. 635 ◯ 678
11. 789 ◯ 7,890
12. 891 ◯ 5,902
13. 5,812 ◯ 5,712
14. 8,001 ◯ 1,008
15. 6,004 ◯ 4,006
16. 4,672 ◯ 4,618
17. 4,712 ◯ 4,721
18. 3,819 ◯ 3,918
19. 6,694 ◯ 6,494
20. 8,028 ◯ 8,280

Write the numbers in order from least to greatest.

21. 3,628; 3,268; 6,328; 3,826

_____; _____; _____; _____

22. 1,293; 2,032; 1,239; 1,382

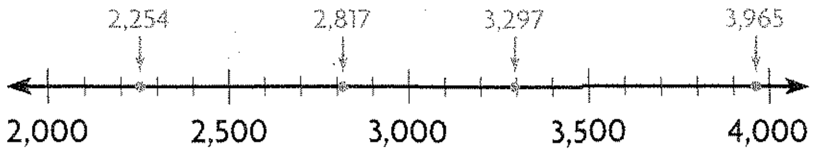
_____; _____; _____; _____

Compare the numbers. Write = or ≠ in the ◯.

23. 2,201 ◯ 2,210
24. 4,321 ◯ 4,231
25. 6,749 ◯ 6,749

Problem Solving REAL WORLD

26. There were 2,817 visitors at an aquarium in March; 3,965 in April; 3,297 in May; and 2,254 in June. In which month did the least number of visitors go to the aquarium? Use the number line to solve the problem.



____

27. **What if** there were 2,941 visitors in July? In which month would the least number of visitors have gone to the aquarium?

____

28. **Test Prep** The dolphin exhibit had 5,346 visitors in the winter; 4,437 in the spring; 6,107 in the summer; and 5,275 in the fall. In which season did the most visitors go to the exhibit?

Ⓐ winter Ⓒ summer

Ⓑ spring Ⓓ fall

Connect to Science

Marine biologists study plants and animals that live in the ocean. They may count, measure, and weigh the animals.

29. Write the weights of the animals from least to greatest.

______; ______; ______; ______

30. **Write Math** **Pose a Problem** Write and solve a problem using the data in the table.

____

____

Giants of the Sea (Possible weights and lengths)

Name	Length (in feet)	Weight (in pounds)
Manatee	12	1,251
Great White Shark	20	4,938
Bluefin Tuna	14	1,759
Giant Clam	39	499

Name ____________________________________

Equal and Not Equal

A.5.3.2 Express mathematical relationships using *equalities* and *inequalities* (>, <, =, ≠)

Essential Question How can you compare two values using symbols?

To compare numbers, first check to see if two numbers are **equal**. If two numbers are equal, they have the same value.

If two numbers are **not equal**, then they have different values, and one is greater than or less than the other. In mathematics, symbols are used for these comparisons.

- = means "is equal to"
- ≠ means "is not equal to"
- < means "is less than"
- > means "is greater than"

Remember

To help remember the less than and greater than symbols, remember that the less than symbol points left (<).

UNLOCK the Problem REAL WORLD

The table shows the average elevation of five Arkansas cities.

Arkansas City	Elevation (in feet)
Clinton	917
Fayetteville	1,350
Fort Smith	460
Ironton	912
Little Rock	309

One Way Compare place values.

If the numbers being compared have different place values, the number with the greater place value is greater.

Which city has a greater elevation, Fayetteville or Fort Smith?

Fayetteville's elevation, 1,350, has ______ place values.

Fort Smith's elevation, 460, has ______ place values.

So, ________________ elevation is greater.

Another Way Compare digits in a place value chart.

Compare the digits in each place value from greatest to least.

Write the digits of the elevations of Clinton and Ironton in the place value chart.

City	Hundreds	Tens	Ones
Clinton	___	___	___
Ironton	___	___	___

The hundreds and the tens digits are __________.

The ones digits are __________.

Because 7 > 2, Clinton's elevation is __________ Ironton's elevation.

Example Simplify operations to compare numerical expressions.

Simplify each side of the problem before making comparisons.

Write <, >, or = for the ●.

6×5 ● $27 + 3$

STEP 1 Simplify the left side of the comparison.

$6 \times 5 =$ ______

STEP 2 Simplify the right side of the comparison.

$27 + 3 =$ ______

Rewrite the comparison and then determine the correct symbol.

30 ◯ 30

The two numerical expressions are equal.

Share and Show MATH BOARD

Write = or ≠ for each ◯.

1. 24 ◯ 42
2. $16 - 3$ ◯ $9 + 4$
3. 4 ◯ $15 \div 3$

Write <, >, or = for each ◯.

4. 76 ◯ 67
5. 24 ◯ 5×6
6. $4 + 12$ ◯ 22

7. Joanna created a quilt that is 4 squares by 6 squares. Marcia created one that is 5 squares by 5 squares. Whose quilt has a greater number of squares? ____________

8. Write Math Diego can buy 5 six-packs of yogurt snacks for the same price as 4 eight-packs. Which is the better deal? **Explain.** ______________________________

____

Math Talk A ≠ can also be used any time you write < or >. Which is more specific? **Explain** your answer.

Name ______________________

On Your Own

Write = or ≠ for each ◯.

9. 31 ◯ 41

10. 208 ◯ 280

11. 312 ◯ 213

12. $4 + 6$ ◯ 5×2

13. $15 - 3$ ◯ $7 + 4$

14. 8 ◯ $30 \div 3$

15. 25 ◯ 4×7

16. $16 - 3$ ◯ 13

17. 75 ◯ 25×3

Write <, >, or = for each ◯.

18. 84 ◯ 48

19. 14 ◯ 2×6

20. 422 ◯ 442

21. 78 ◯ 78

22. $36 \div 3$ ◯ $9 + 4$

23. 415 ◯ 541

24. 24 ◯ 214

25. $16 - 8$ ◯ $2 + 4$

26. $4 + 2 + 3$ ◯ $18 \div 2$

27. **Write Math** Jackie's collector card sheets hold 4 rows of 3 cards each. Joey's collector card sheets hold 3 rows of 4 cards each. Who has sheets that hold the most cards? **Explain.**

____

____

28. Ethan can buy one of two organizers for his miniature race cars. One organizer has 5 rows of 7 cars. The second organizer holds 40 cars. Which organizer holds more cars? **Explain** your answer.

____

____

SHOW YOUR WORK

29. H.O.T. Kate is making cupcakes for her class bake sale. She signed up to make 4 dozen cupcakes. She bought enough ingredients to make 40 cupcakes. Does she have enough ingredients? **Explain** your answer.

____

____

Problem Solving REAL WORLD

Use the table of driving distances for 30–32.

	Clinton	Fayetteville	Fort Smith	Ironton	Little Rock
Clinton	–	116	126	77	68
Fayetteville	116	–	56	167	160
Fort Smith	126	56	–	150	146
Ironton	77	167	150	–	9
Little Rock	68	160	146	9	–

30. Which city is closer to Clinton: Fayetteville or Fort Smith?

____

31. H.O.T. Which cities are the least distance from each other?

____

32. Test Prep Which city is the greatest distance from Fayetteville?

Ⓐ Clinton

Ⓑ Fort Smith

Ⓒ Ironton

Ⓓ Little Rock

SHOW YOUR WORK

Name ___________________________

Estimate Products and Quotients

Essential Question How can you use rounding and compatible numbers to estimate products and quotients?

NO.3.3.3 Develop, with and without appropriate *technology, computational fluency* in multiplication and division up to two-*digit* by one-*digit* numbers using two-*digit* by one-*digit* number *contextual problems*

NO.3.3.5 Use *estimation strategies* to solve problems and judge the reasonableness of the answer

UNLOCK the Problem REAL WORLD

Sometimes to answer a question or solve a problem, an exact answer is not needed. An **estimate** can be used if you need to find a number that is close to the value of the exact answer.

Remember
If a question asks "about how many," it is asking for an estimate.

Example 1 Use rounding.

The mascot for the University of Arkansas is the razorback, also known as a wild pig. Wild pigs have litters of 6 to 8 piglets, and each piglet weighs between 16 and 32 ounces. About how much is the greatest possible weight of a litter?

Think: To find the greatest possible weight, choose the situation that would involve the greatest numbers.

STEP 1 Determine the operation and the numbers to use.

- Multiply the greatest number of piglets in a litter by the greatest weight per piglet. 8 and 32 are the numbers to be multiplied.

STEP 2 Round the greater factor to the nearest ten.
<u>3</u>2 rounds to 30.

STEP 3 Use basic facts and patterns to estimate 8×32.

$8 \times 3 = 24$
$8 \times 30 = 240$

Remember
If you round up, the estimate will be *greater than* the exact answer.
If you round down, the estimate will be *less than* the exact answer.

So, the greatest weight of a litter is about _____ ounces.

1. If you wanted to find an estimate of the least possible weight of an average size litter, what numbers would you start with? **Explain** your answer.

____

____

When estimating quotients, it is helpful to be able to identify **compatible numbers.** Compatible numbers make it easy to mentally complete operations.

Example 2 Use compatible numbers.

Rachel bought a package of 30 toys for her party. If she invited 4 guests, about how many toys did she buy for each person?

STEP 1 Determine what you need to find out.

What is 30 divided by 4?

STEP 2 Change the dividend to a number that is compatible with the divisor, 4.

30 is close to 28.
28 is divisible by 4.

Math Talk Explain how to determine to what place value to round a factor.

STEP 3 Divide using the compatible numbers and mental math to estimate.

$28 \div 4 =$ _____

So, Rachel bought about _____ toys for each guest.

Share and Show MATH BOARD

Estimate each product or quotient.

1. 24×9 __________

2. 78×5 __________

3. $17 \div 4$ __________

4. $39 \div 8$ __________

5. 21×3 __________

6. $65 \div 7$ __________

Name ____________________

On Your Own

Estimate each product or quotient.

7. 87×6 ________

8. 62×8 ________

9. $75 \div 9$ ________

10. 71×8 ________

11. $46 \div 3$ ________

12. 19×4 ________

13. $34 \div 6$ ________

14. 81×4 ________

15. $52 \div 6$ ________

Problem Solving REAL WORLD

SHOW YOUR WORK

16. Brian bought a 24-pack of juice drinks. Each juice drink holds 8 ounces of juice. About how many ounces of juice are in the pack?

____

17. Darcy is separating cereal into 8-ounce servings. She has 75 ounces of cereal. About how many servings can she make?

____

18. H.O.T. Hal is ordering feed for 40 piglets. He needs to order feed for 5 days, and each piglet will eat about 9 ounces a day. About how many ounces should he order? Should he overestimate or underestimate? Explain.

____

____

UNLOCK the Problem REAL WORLD

19. H.O.T. Sierra wants to serve lemonade at her party. She wants to order 12 ounces for each of the 40 guests. At the store she can only find 64-ounce jugs of lemonade for $1.85 each. About how many jugs will she need for the party?

a. What do you need to find?

____

b. What information do you need?

____

c. Should you overestimate or underestimate? **Explain.**

____

____

____

d. Show your work to solve the problem.

____

____

____

____

____

____

____

20. **Test Prep** A gallon jug holds 128 ounces. About how many 6-ounce servings does a gallon jug hold?

Ⓐ 780

Ⓑ 140

Ⓒ 80

Ⓓ 20

21. **Test Prep** Tyran is ordering feed mix. He needs to serve 2 pounds of feed mix to each of his 18 horses daily. About how much feed should he order for 4 weeks?

Ⓐ 4,800 pounds

Ⓑ 1,200 pounds

Ⓒ 600 pounds

Ⓓ 100 pounds

Name ______________________________

Remainders

Essential Question How can you use models to divide whole numbers that do not divide evenly?

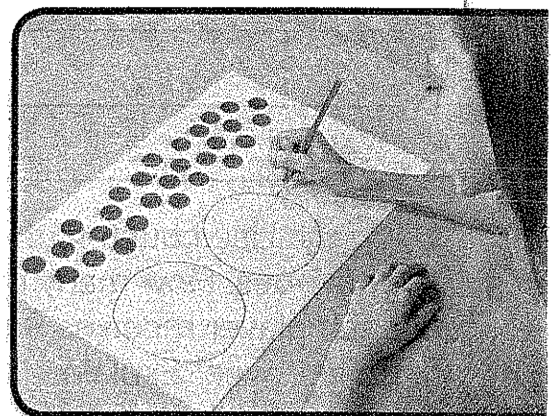
NO.2.3.4 Model, represent and explain division as measurement and partitive division including equal groups, related *rates*, price, *rectangular arrays* (*area* model), combinations and multiplicative comparison

NO.3.3.3 Develop, with and without appropriate *technology*, *computational fluency* in multiplication and division up to two-*digit* by one-*digit* numbers using two-*digit* by one-*digit* number *contextual problems*

Investigate

Materials ■ counters

Erica and 2 friends are playing a game of dominoes. There are 28 dominoes in the set. Erica wants each player to receive the same number of dominoes. Can she divide them equally among the 3 players? Why or why not?

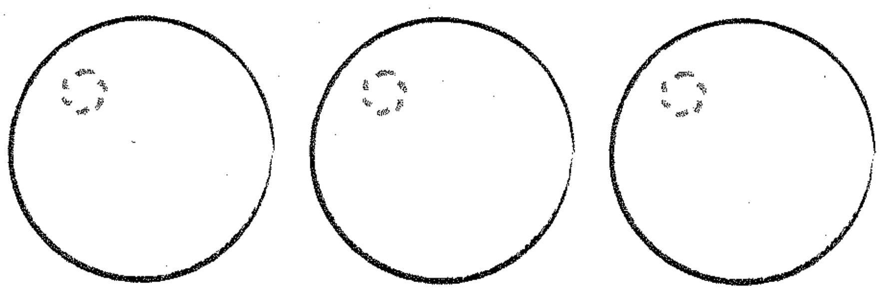


You can use division to find the number of dominoes each player will receive.

A. Use 28 counters to represent the 28 dominoes. Then draw 3 circles to represent the 3 players.

B. Share the counters equally among the 3 groups by placing them in the circles.

Draw a quick picture to show your work.

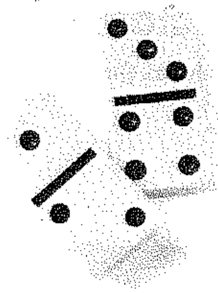


C. Find the number of counters in each group and the number of counters left over. Record your answer.

______ counters in each group

______ counter left over

Draw Conclusions



1. How many dominoes does each player receive? __________

   How many dominoes are left over? ____________________

2. H.O.T. **Explain** how the model helped you find the number of dominoes each player receives. Why is 1 counter left outside the equal groups?

   ____

   ____

   ____

3. **Apply** Use counters to represent a set of 28 dominoes. How many players can play dominoes if each player receives 9 dominoes? Will any dominoes be left over? Explain.

   ____

   ____

Make Connections

When a number cannot be divided evenly, the amount left over is called the **remainder**.

Use counters to find 39 ÷ 5.

- Use 39 counters.
- Share the counters equally among 5 groups. The number of counters left over is the remainder.

Draw a quick picture to show your work.

For 39 ÷ 5, the quotient is _____ and the remainder is _____, or 7 r4.

MATHEMATICAL PRACTICES

Math Talk How do you know when there will be a remainder in a division problem?

Name ______________________________

Share and Show MATH BOARD

Use counters to find the quotient and remainder.

1. $10 \div 3$ ________
2. $28 \div 5$ ________
3. $15 \div 6$ ________
4. $11 \div 3$ ________
5. $9\overline{)26}$ ________
6. $22 \div 3$ ________
7. $4\overline{)19}$ ________
8. $4\overline{)38}$ ________
9. $29 \div 4$ ________
10. $34 \div 5$ ________
11. $25 \div 3$ ________
12. $7\overline{)20}$ ________

Divide. Draw a quick picture to help.

13. $19 \div 3$ ________
14. $5\overline{)47}$ ________
15. $4\overline{)35}$ ________
16. $23 \div 8$ ________

17. Write Math **Explain** how you use a quick picture to find the quotient and remainder.

____

____

____

____

Problem Solving REAL WORLD

H.O.T. What's the Error?

18. Macy, Kayley, Maddie, and Rachel collected 13 marbles. They want to share the marbles equally. How many marbles will each of the 4 girls get? How many marbles will be left over?

Frank used a model to solve this problem. He says his model represents $4\overline{)13}$. What is his error?

Look at the way Frank solved this problem. Find and describe his error.

____

____

____

____

____

____

____

____

____

____

____

____

Draw a correct model and solve the problem.

So, each of the 4 girls will get _____ marbles and _____ marble will be left over.

Name ____________________________

Model 2-Digit by 1-Digit Division

Essential Question How can you use models to divide a 2-digit number by a 1-digit number?

NO.2.3.4 Model, represent and explain division as measurement and partitive division including equal groups, related *rates*, price, *rectangular arrays* (*area* model), combinations and multiplicative comparison

NO.3.3.3 Develop, with and without appropriate *technology, computational fluency* in multiplication and division up to two-*digit* by one-*digit* numbers using two-*digit* by one-*digit* number *contextual problems*

In division, the number that is being divided is called the **dividend.** The number by which a number is divided is called the **divisor.** The answer is called the **quotient.**

$$\underbrace{40}_{\text{dividend}} \div \underbrace{2}_{\text{divisor}} = \underbrace{20}_{\text{quotient}}$$

UNLOCK the Problem REAL WORLD

A biologist puts 84 rescued turtles into 3 large containers. She puts an equal number of turtles into each container. How many turtles does the biologist put into each container?

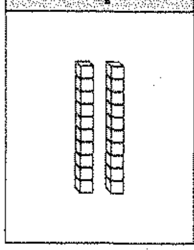
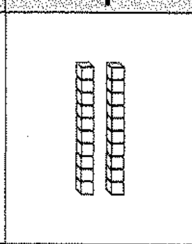
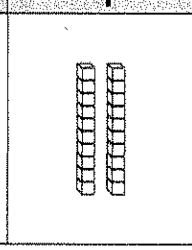
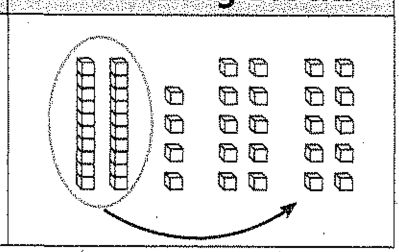
Remember

The dividend tells how many objects need to be divided. The divisor tells how many equal groups to make.

Example 1 Use a model to divide.

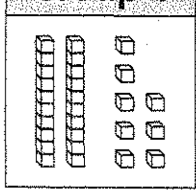
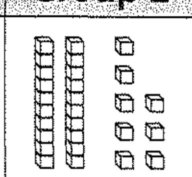
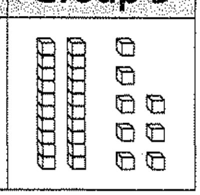
Use base-ten blocks to model 84 ÷ 3.

STEP 1: Share the tens blocks equally among 3 groups. Regroup any leftover tens as ones blocks

Group 1	Group 2	Group 3	Remaining Blocks
			

Think: 2 tens is the same as 20 ones.

STEP 2: Share the 24 remaining ones blocks equally among the 3 groups.

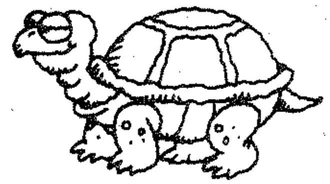
Group 1	Group 2	Group 3
		

Think: There are 24 remaining ones blocks. I can put 8 ones blocks into each group.

There are _____ tens and _____ ones in each group.

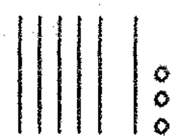
So, the biologist puts _____ turtles into each container.

Example 2 Use a model to divide with a remainder.



Another year, there are 63 rescued turtles. The biologist wants to divide them equally among 4 large tanks. She puts the leftover turtles into one smaller tank. How many turtles does she put in each large tank? How many turtles does she put in the small tank?

Use a quick picture to model $63 \div 4$.

Think	Quick Picture
STEP 1: Draw 63 as 6 tens 3 ones.	
STEP 2: Draw 4 circles to represent the 4 groups. Share the 6 tens among the 4 groups. Cross out the tens you use. There is _____ ten in each group, and _____ tens leftover.	
STEP 3: Regroup the remaining _____ tens by drawing _____ ones. Cross out the tens you regroup. There are now _____ ones.	
STEP 4: Share the 23 ones among the 4 groups. Cross out the ones you use. There are _____ ones in each group, and _____ ones leftover.	$64 \div 4 =$ _____ r _____

So, the biologist puts _____ turtles in each of the large tanks and _____ turtles in the smaller tank.

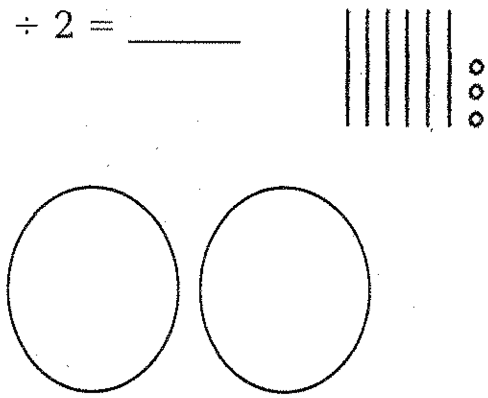
Math Talk Explain why you regroup in Step 3.

Name ____________________________________

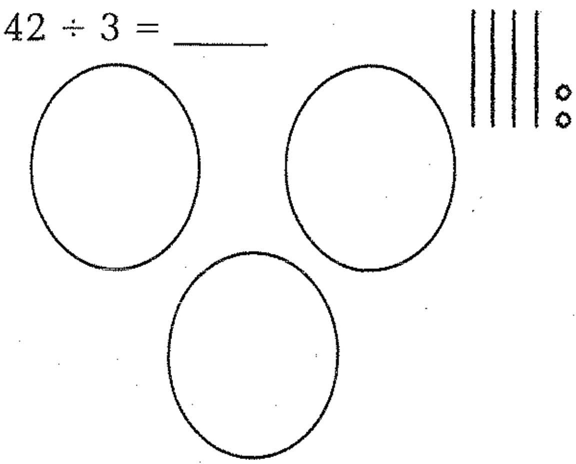
Share and Show

Divide. Use the model to help draw a quick picture.

1. $63 \div 2 =$ ______



2. $42 \div 3 =$ ______



On Your Own

Divide. Draw a quick picture.

3. $67 \div 4 =$ ______

4. $77 \div 3 =$ ______

Name the underlined part of the division sentence.
Write *dividend, divisor, quotient,* or *remainder.*

5. $85 \div 5 = \underline{31}$

____

6. $63 \div 4 = 15\ \underline{r3}$

____

7. $\underline{50} \div 3 = 16\ r2$

____

Problem Solving REAL WORLD

8. Ling and 3 friends are playing a game with 36 cards. Each player gets the same number of cards to start the game. If Ling deals out as many of the cards as she can, how many cards does each player get?

____

9. Tommy has 46 flowers that he is using to make bouquets. He will make as many bouquets as he can with 6 flowers each, and then make a smaller bouquet with the remaining flowers. How many bouquets will Tommy make in all? **Explain.**

____

____

____

10. H.O.T. Cedric has 17 baseball cards that he wants to divide evenly between several of his friends. Can he do this? **Explain.**

____

____

____

11. **Test Prep** Zanita earned $18 for babysitting her little brother for 3 hours. How much did Zanita earn each hour?

Ⓐ $3

Ⓑ $6

Ⓒ $18

Ⓓ $54

SHOW YOUR WORK

Name ____________________

Patterns with Shapes

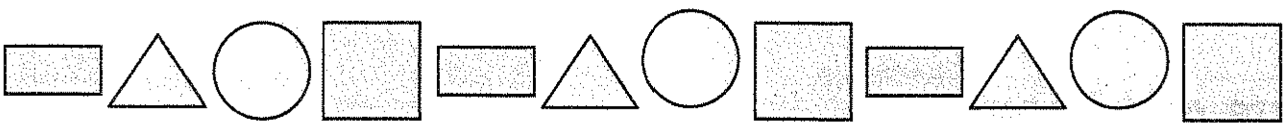
Essential Question How can you identify and describe patterns made with shapes?

A.4.3.4 Use repeating and growing numeric or geometric *patterns* to solve problems

UNLOCK the Problem

A pattern is an ordered set of numbers or objects. The **pattern unit** is the part of the pattern that repeats. When the same pattern unit is used over and over again, it makes a **repeating pattern**.

Look at the pattern. Circle the pattern unit.



The pattern unit is ____________________.

What are the next two shapes in the pattern? ____________

Try This! **Circle the pattern unit. Then draw the missing shapes.**

What are the next two shapes in the pattern? ____________

Find a pattern. Draw the missing shape.

- What words can you use to describe the pattern?

____

In a **growing pattern**, the number, or number of figures, increases by the same amount each time.

Example

Math Idea
A rule must be true for all the numbers or figures in the pattern.

- What is a rule for the pattern?

____

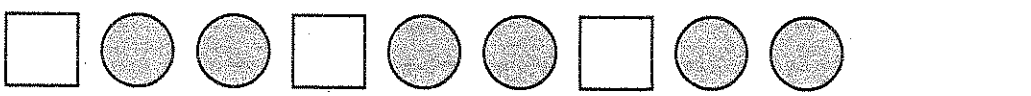
- How many rectangles will the sixth figure have?

____

Share and Show

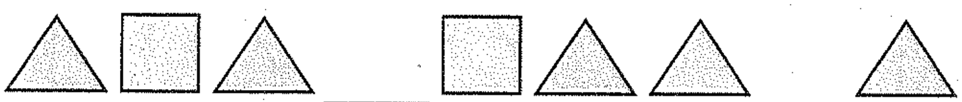
1. Circle the pattern unit. Draw the next 2 shapes.

   Think: What part of the pattern repeats?

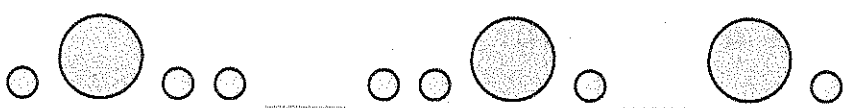


Circle the pattern unit. Draw the missing shapes.

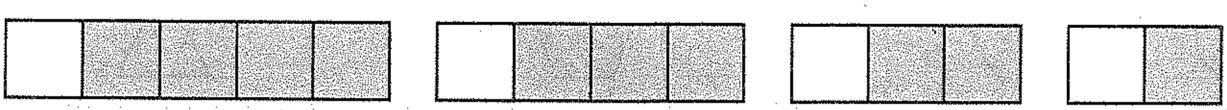
2.



3.



4. **Write a rule for the pattern.**



____

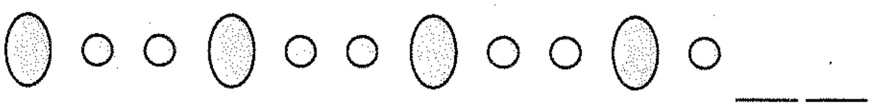
Math Talk Describe another pattern you see in Exercise 1.

Name ________________________

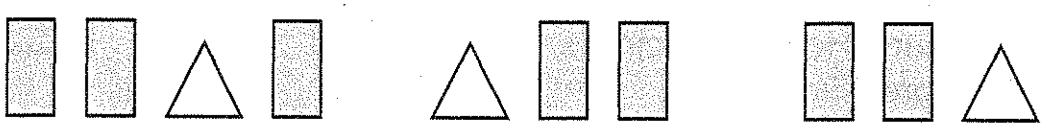
On Your Own

Circle the pattern unit. Draw the next 2 shapes.

5. 

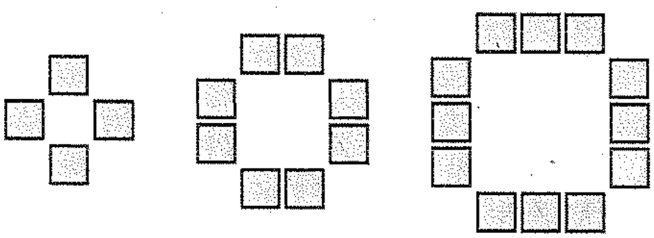
6. 

Circle the pattern unit. Draw the missing shapes.

7. 

8. 

Write a rule for the pattern.

9. 

____

10. Juan used tiles to make the pattern below. Ann used a number pattern to tell how many tiles are in the fifth figure. What pattern could she have used?

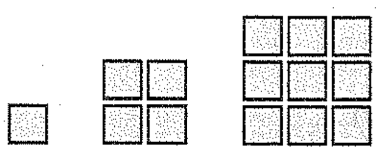


Figure 1 2 3

____

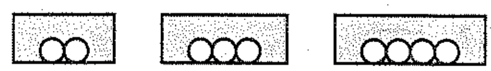
____

Problem Solving

11. Carter used this pattern unit: square, circle, triangle.
Use the pattern unit to draw Carter's pattern.

What is the tenth shape in his pattern? ___________

12. Write Math Josie used this rule to make this pattern: Add 1 circle to each rectangle to make the next figure. How many circles are in the eighth figure? **Explain.**

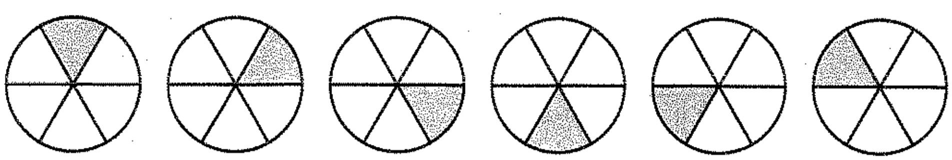


____

____

____

13. H.O.T. Draw the twentieth figure in the pattern below. **Explain** how you knew what to draw.



____

____

14. **Test Prep** What is a rule for the pattern below?

Ⓐ Add 1 square in the row.

Ⓑ Add 1 square, then add triangles with one more triangle than the last column.

Ⓒ Add 1 square, then add triangles with 2 more triangle than the last column.

Ⓓ Add 3 triangles in the row.